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PAPER

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MASUMITSU INO, HIROYOSHI TSUBOTA, HIROAKI ICHIKAWA,
SHINICHI TERAGUCHI, TAKETO OKA, TORU AKUTAGAWA,
TOSHIKAZU MAEKAWA, YOSHIHARU NAKAJIMA, and NAOSHI GOTO

Appeal 2010-001223
Application 09/424,544¹
Technology Center 2600

Before MAHSHID D. SAADAT, MARC S. HOFF,
and CARLA M. KRIVAK, *Administrative Patent Judges*.

SAADAT, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from a Final Rejection of claims 25-29, 31, 37, and 43-78, which constitute all the claims pending in the application as claims 1-24, 30, 32-36, and 38-42 have been canceled. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

¹ An Oral Hearing for this appeal scheduled for Jan. 12, 2011, has been waived.

STATEMENT OF THE CASE

Introduction

Appellants' invention relates to a matrix-type liquid crystal display (LCD) having driver circuits for applying a signal potential to each pixel (*see* Spec. 1:4-9, 3:24-4:13).

Exemplary independent claims 25 and 49 read as follows:

25. A liquid crystal display comprising:

- a display portion, said display portion having a plurality of gate lines, a plurality of signal lines and a plurality of pixels,

- a pixel of said plurality of pixels being located at an intersection of a gate line of said plurality of gate lines and a signal line of said plurality of signal lines; and

- a plurality of driver circuits, said plurality of driver circuits including at least one general driver circuit and one remainder driver circuit,

- each said at least one general driver circuit having a general driver horizontal shift register circuit and a plurality of general driver circuit output terminals, a general driver circuit output terminal of said plurality of general driver circuit output terminals providing a signal potential to one of said plurality of signal lines,

- said remainder driver circuit having a remainder driver horizontal shift register circuit and a plurality of remainder driver circuit output terminals, a remainder driver circuit output terminal of said plurality of remainder driver circuit output terminals providing another signal potential to another of said plurality of signal lines,

- the quantity of said remainder driver circuit output terminals being defined as $(S - (OP * (DC - 1)))$, "S" being the quantity of said plurality of signal lines, "OP" being the quantity of said general driver circuit output terminals, and "DC" being the quantity of said plurality of driver circuits, and

said quantity of said general driver circuit output terminals being different than said quantity of said remainder driver circuit output terminals.

49. A liquid crystal display comprising:

a display portion, said display portion having a plurality of gate lines, a plurality of signal lines and a plurality of pixels,

a pixel of said plurality of pixels being located at an intersection of a gate line of said plurality of gate lines and a signal line of said plurality of signal lines; and

a plurality of driver circuits, each of said plurality of driver circuits having a plurality of driver circuit output terminals,

a driver circuit output terminal of said a plurality of driver circuit output terminals providing a signal potential to a signal line of said plurality of signal lines,

the quantity of said driver circuit output terminals being the same quantity for said each of said plurality of driver circuits, and

the quantity of said driver circuits being defined as N/n , wherein "N" is the quantity of said signal lines and "n" is said quantity of said driver circuit output terminals.

Rejections

The Examiner relies on the following prior art in rejecting the claims:

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| Hayashi | US 4,745,406 | May 17, 1988 |
| Takeda | US 4,825,203 | Apr. 25, 1989 |
| Lee | US 5,426,447 | Jun. 20, 1995 |
| Hirai | US 5,440,304 | Aug. 8, 1995 |

Claims 25-29, 31, 37, 43-48, and 67-78 stand rejected under 35 U.S.C. §112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements. *See* Ans. 37-40.

Claims 25-29, 31, 37, 43-48, and 71-78 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Takeda. *See* Ans. 3-19.

Claims 25-29, 31, 37, 43-48, and 71-78 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Hirai. *See* Ans. 3-19.

Claim 49 stands rejected under 35 U.S.C. § 102(b) as being anticipated by Hayashi. *See* Ans. 30-31.

Claims 25-29, 31, 37, 43-48, and 71-78 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Takeda and Hirai. *See* Ans. 3-19.

Claims 49-66 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Takeda and Lee. *See* Ans. 20-26.

Claims 67-70 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Takeda, Lee, and Hirai. *See* Ans. 27-30.

Claims 67-70 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hayashi and Hirai. *See* Ans. 31-34.

Claims 67-70 stand rejected under 35 U.S.C. § 102(b) as being anticipated by, or in the alternative under 35 U.S.C. § 103(a) as being unpatentable over Hirai. *See* Ans. 34-36.

We make reference to the Briefs (Appeal Brief filed Dec. 2, 2008, and Reply Brief filed Jun. 15, 2009) and the Answer (mailed Apr. 14, 2009) for their respective details.² Only those arguments actually made by Appellants have been considered in this decision. Arguments which Appellants did not

² Appellants' Reply Brief, which was refiled August 27, 2009, included an amendment to the claims which proposed canceling all the claims except for claims 48 and 55 which were written in independent form. However, the Examiner denied entry of the amendment and the Reply Brief in communications mailed August 21, 2009 and November 12, 2009. We consider the Reply Brief to the extent that the applied references and the arguments raised in the Examiner's Answer are addressed.

make in the Briefs have not been considered and are deemed waived. *See* 37 C.F.R. § 41.37(c)(1)(vii).

ANALYSIS

I. The Rejections under 35 U.S.C. § 112, Second Paragraph

The Examiner has rejected claims 25-29, 31, 37, 43-48, and 67-78 under 35 U.S.C. § 112, second paragraph, as “being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01” (Ans. 37-40, 42-43). The Examiner interprets claim 25 as reciting “a liquid crystal display” and interprets depending claims 26-29, 31, 37, 43-48, and 67-78 as requiring only “a display” (Ans. 37). With respect to claim 31, the Examiner takes the position that the recited terms “a surplus connecting region” and “does not contribute” are indefinite (Ans. 37-38). With respect to claim 37, the Examiner asserts that the claimed term “a demultiplexed signal potential” lacks antecedent basis and is unclear whether it constitutes a claim element (Ans. 38). The Examiner makes similar assertions regarding claims 67-70 and 76 (Ans. 39-40).

Appellants respond by citing *Phillips v. AWH Corp.*, 75 USPQ2d 1321, 1326 (Fed. Cir. 2005) and *General Electric Co. v. Nintendo Co.*, 50 USPQ2d 1910, 1914 (Fed. Cir. 1999) as support for the propositions that the description may act as a sort of dictionary, which explains the invention and may define terms used in the claims and that the ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art (App. Br. 10-11). Appellants further provide how

each claim term has proper antecedent basis in their respective base claims (App. Br. 10-18).

The Examiner, instead of responding to these arguments, points out the breadth of claim 49 in comparison with claim 25 (Ans. 41-42) and repeats the same assertions made in the statement of the rejection (Ans. 42-46). Based on Appellants' contentions above pointing out error in this reasoning by the Examiner, we disagree with the Examiner's position.

Therefore, we do not sustain the rejection of claims 25-29, 31, 37, 43-48, and 67-78 under 35 U.S.C. §112, second paragraph, for being incomplete.

II. The Rejections under 35 U.S.C. §§ 102 and 103

Appellants argue claims 25-29, 31, 37, 43-48, and 71-78 as one group for their rejections as anticipated by Takeda or Hirai and as obvious over Takeda and Hirai (App. Br. 19-27) and state that these claims stand or fall together (App. Br. 19). Therefore, we select claim 25 as representative of this group of claims.

Similarly, Appellants indicate that claims 49-70 stand or fall as one group (App. Br. 28) with respect to their rejections as anticipated by Hayashi or Hirai and as obvious over various combinations of Takeda, Lee, Hirai, and Hayashi (App. Br. 28-38). Therefore, we select claim 49 as representative of this group of claims. *See* 37 C.F.R. § 41.37(c)(1)(vii).

A. The Rejections under §§102, 103 over Takeda, Hirai, or Takeda in view of Hirai

With respect to Takeda, Appellants contend that Takeda does not teach "a plurality of driver circuits," as recited in claim 25 and instead,

shows only a single column electrode drive circuit 13 in Figure 2 (App. Br. 21-23). Additionally, Appellants argue that Takeda's shift register 31 is not the same as the claimed horizontal shift register circuits for a general driver or a remainder driver horizontal shift register circuit (App. Br. 23-24; Reply Br. 5-9).

The Examiner relies on Figure 1(A) of Takeda and explains that a plurality of output terminals Q_1 , Q_2 , and Q_3 from the output buffers 36 meet this claim limitation (Ans. 49). With respect to the claimed horizontal shift register circuits, the Examiner asserts that the portion of the shift register 31 connected to the terminals Q_1 - Q_3 corresponds to the general driver circuit outputs while output terminals Q_{N-1} - Q_N correspond to the remainder driver circuits (Ans. 49-51).

With respect to Hirai, Appellants contend that the driving methods shown in Figures 4 and 5 of Hirai are not based on using the same quantity of the remainder driver and the general driver circuits recited in claim 25 (App. Br. 26-27; Reply Br. 9-11).

We agree with the Examiner and adopt as our own the findings and conclusions set forth by the Examiner in the action from which this appeal is taken and the reasons set forth by the Examiner in the Examiner's Answer in response to Appellants' Appeal Brief (*see* Ans. 47-54). We particularly agree with the Examiner (Ans. 7) that using different portions of a shift register for the general driver and the remainder driver is not precluded by claim 25. Similarly, with respect to the transparent insulating substrate recited in claim 48, we agree with the Examiner's findings and conclusions (Ans. 52-54) and adopt them as our own. Therefore, we sustain the

rejections of claims 25-29, 31, 37, 43-48, and 71-78 over each of Takeda and Hirai, or their combination.

B. The Rejections over various combinations of Takeda, Lee, Hirai, or Hayashi

With respect to the rejection over Takeda and Lee, Appellants present the same arguments discussed above regarding claim 25, and add that neither Lee nor Takeda teaches or suggests the claimed subject matter (App. Br. 30, 34). Appellants specifically contend that the references fail to teach or suggest “a plurality of driver circuits” wherein “the quantity of said driver circuit output terminals being the same quantity for said each of said plurality of driver circuits” and “the quantity of said driver circuits being defined as N/n , wherein ‘N’ is the quantity of said signal lines and ‘n’ is said quantity of said driver circuit output terminals,” as recited in claim 49 (*id.*).

Regarding the rejections of claims 67-70 over Hirai alone, or in combination with Takeda and Lee, or with Hayashi, Appellants provide the same arguments for Hirai that were presented above for claim 25 and found to be unpersuasive (App. Br. 35-37). Appellants further provide arguments for Hayashi in the form of general allegations that the reference fails to teach or suggest the disputed claim limitations (App. Br. 37-38).

We agree with the Examiner and adopt as our own the findings and conclusions set forth by the Examiner in the action from which this appeal is taken and the reasons set forth by the Examiner in the Examiner’s Answer in response to Appellants’ Appeal Brief (*see* Ans. 54-64). We particularly agree with the Examiner that Appellants’ arguments against Takeda and Lee improperly attempt to show non-obviousness by attacking the references individually (Ans. 55-59).

Therefore, we sustain the 35 U.S.C. §§ 102, 103 rejections of claims 49-70 over each of Hayashi or Hirai, over Takeda and Lee, or their combinations.

DECISION

The Examiner's decision rejecting claims 25-29, 31, 37, and 43-78 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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